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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,417	12/31/2003	Paul Johnson	24NS-129203	4646

7590 09/10/2007  
Patrick W. Rasche  
Armstrong Teasdale LLP  
Suite 2600  
One Metropolitan Square  
St. Louis, MO 63102

EXAMINER
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SAINT SURIN, JACQUES M

ART UNIT	PAPER NUMBER
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2856

MAIL DATE	DELIVERY MODE
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09/10/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/750,417	JOHNSON ET AL.	
	Examiner	Art Unit	
	Jacques M. Saint-Surin	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 June 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 and 15-20 is/are allowed.
- 6) ☒ Claim(s) 11-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/20/07 has been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nusbickel et al. (US Patent 3,616,684) in view of Dow (US Patent 4,785,816).

Regarding claim 11, Nusbickel discloses a method of inspecting a portion of weld (ultrasonic inspection probe 12 of Fig. 1), comprising:

Nusbickel discloses a probe housing 16 comprising a plurality of sides, an open top end and an open bottom end, the plurality of sides defining a housing cavity (see: Fig. 1) and a row of transducers 14 (see Fig. 1 and col. 2, lines 37-46). However, Nusbickel does not disclose or suggest at least one transducer phased array probe pivotably mounted within said probe housing. Dow discloses in an ultrasonic transducer probe including a housing, and a pivotally mounted transducer located within said housing (see: col.) It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize in Nusbickel the phased array probe of

Art Unit: 2856

Dow because it provides an ultrasound probe which includes a pivotable transducer located within said housing which for pivoting, rotating and revolving during inspection of the weld or object and thereby allowing a larger ultrasonic array for better and reliable inspection.

4. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nusbickel et al. (US Patent 3,616,684) in view of Dow (US Patent 4785816) and further in view of Johnson (US Patent 6332,011).

Regarding claims 12-13, Nusbickel in view of Dow does not disclose the phased array probe includes at least one transducer configured to actuate a frequency, a pitch and an aperture. Johnson discloses referring to FIGS. 3 and 4, phased array probe contains one linear array transducer having a plurality of elements 98 which emits an ultrasonic sound beam 100. The basic parameters of phased array probe 96 are defined as frequency, aperture A, element size X, element width Y, pitch or element spacing P, and number of elements 98, see: col. 3, lines 58-64. Regarding claim 13, Johnson discloses probe 96 includes a frequency. It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize in the combination of Nusbickel in view of Dow the techniques of Johnson because it would provide a suitable transducer frequency for the material type and thickness of shroud and also the element pitch is determined by calculating the acoustic aperture A needed to focus beam 100 at the required sound path and dividing this value by the total number of elements thereby, making the above combinative more effective.

Regarding claim 14, the combination of Nubiskel in view of Dow discloses the ultrasonic beam may be directed either electronically, as by an electronically phased linear array probe but does not specifically disclose electronically steer said ultrasonic beam along a substantial axial path across said weld in a linear path in predetermined increments from an outer surface toward an inner surface and electronically steer said ultrasonic beam along a substantially circular path across said weld from said outer surface toward said inner surface. Johnson discloses probe 96 can electronically steer ultrasonic sound beam 100 to scan HI weld 70 with the beam moving from shroud head flange outer surface 92 to shroud head flange inner surface 88, and acquiring scan data over a length of the scan. It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize in Nubiskel the techniques of Dow because it would perform the function of the relatively complex electronics used to "steer" the beam of a phased array probe thereby providing the advantages of having a faster and reliable inspection by reducing the burden of mechanically or manually moving the transducer in different positions during operation.

***Response to Arguments***

5. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

***Allowable Subject Matter***

6. Claims 1-10 and 15-20 are allowed.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques M. Saint-Surin whose telephone number is

Art Unit: 2856

(571) 272-2206. The examiner can normally be reached on Mondays to Fridays between 10:30 A.M and 800 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jacques M. Saint-Surin

August 31, 2007